



**Ohio River Valley Water Sanitation Commission  
Annual Report - Fiscal Year 2025  
July 1, 2024 - June 30, 2025**



# Table of Contents

To the President and Governors	2	ORSANCO Staff Highlights	17
Chair & Executive Director Message	3	Ohio River Basin Partnerships & Activities	18
ORSANCO Staff	4	Ohio River Way	20
Members of the Commission	5	Basin-Wide Improvement Projects	21
What We Do	6	Foundation for Ohio River Education	22
ORSANCO Year in Review	8	Outreach Programs	24
A Living River	9	2025 Resources Overview	25
Biological Programs	10		
Water Quality Monitoring			
Harmful Algal Blooms	13		
Contact Recreation	14		
Bimonthly & Clean Metals Monitoring	15		
Organics Detection System & Spill Response	16		

## To the President and Governors

The Ohio River Valley Water Sanitation Commission (ORSANCO) is an interstate water pollution control agency created in 1948 by the State of Illinois, the State of Indiana, the Commonwealth of Kentucky, the State of New York, the State of Ohio, the Commonwealth of Pennsylvania, the Commonwealth of Virginia, and the State of West Virginia with the approval of the Congress of the United States. The Commissioners of ORSANCO respectfully submit the following annual report of activities for Fiscal Year 2025 to:

The Honorable J.B. Pritzker, Governor of Illinois	The Honorable Josh Shapiro, Governor of Pennsylvania
The Honorable Mike Braun, Governor of Indiana	The Honorable Glenn Youngkin, Governor of Virginia
The Honorable Andy Beshear, Governor of Kentucky	The Honorable Patrick Morrisey, Governor of West Virginia
The Honorable Kathy Hochul, Governor of New York	And the Honorable Donald J. Trump, President of the United States
The Honorable Mike DeWine, Governor of Ohio	

# Chair’s Message

Serving as Chair of the Ohio River Valley Water Sanitation Commission (ORSANCO) is both an honor and a responsibility I am proud to carry on behalf of my home state of West Virginia. I am deeply grateful for the leadership and support of both Governor Jim Justice, and Governor Patrick Morrisey, whose commitment to protecting the Ohio River Basin reflects the priorities of the people and communities we serve.

I am also fortunate to work closely with Senator Shelley Moore Capito, whose leadership on the Senate Committee on Environment and Public Works (EPW) continues to strengthen ORSANCO’s ability to protect and restore the Ohio River. Her advocacy and support are critical to advancing basin-wide priorities at the federal level.

This fiscal year was a year of meaningful progress for ORSANCO and for the basin as a whole. Working alongside our member states, federal agencies, and dedicated partners, we advanced initiatives that expand our water quality monitoring network, improve interstate spill response coordination, and increase public access to real-time data.

We also played a vital role in supporting the Ohio River Basin Restoration Program Act, working with the Ohio River Congressional Caucus, the Ohio River Basin Alliance (ORBA), state leaders, and our federal delegation to ensure the basin’s needs are recognized and addressed. This work reflects our understanding that the health of the Ohio River affects us all.

As Chair, I am continually inspired by the dedication of our commissioners, the expertise of our staff, and the shared commitment of our partners across the basin. Together, we are building a stronger, more resilient Ohio River—one that supports drinking water, recreation, economic vitality, and healthy ecosystems for all who depend on it.

On behalf of ORSANCO, thank you for your trust, your partnership, and your shared stewardship of this indispensable resource.

David Flannery



## Executive Director’s Message

I am deeply honored to have been selected as the new Executive Director of the Ohio River Valley Water Sanitation Commission (ORSANCO) this year. Stepping into this role is both a privilege and a responsibility I take to heart. ORSANCO’s long history of science-driven leadership, collaboration, and service to the people of the Ohio River Basin inspires me every day.

In addition to advancing key technical initiatives like our nutrient monitoring program as part of the Mississippi River/Gulf of America Hypoxia Task and enhancing our real-time water quality data network, we have strengthened our presence at the national level.

We worked closely with the Ohio River Congressional Caucus to elevate the importance of our shared waterway and supported bipartisan efforts to advance the Ohio River Basin Restoration Program Act. This legislation, if enacted, would provide the first-ever comprehensive federal investment in the restoration and protection of the Ohio River Basin—a milestone decades in the making.

Our mission is powered by collaboration. From member states and utilities to federal agencies, nonprofit partners, and the communities who rely on the river, our success depends on shared vision and collective action. I am grateful to our commissioners, staff, and partners for their expertise, dedication, and unwavering commitment to safeguarding the river.

As we look ahead, I am excited to build on this momentum—expanding our science, deepening our partnerships, and ensuring that the Ohio River continues to sustain life, recreation, and economic vitality for generations to come.

Sam Dinkins







# Who We Are



## ORSANCO Staff



Samuel Dinkins,  
Executive Director



Tracey Edmonds,  
Administrative Assistant

## Technical Programs



Ryan Argo,  
Technical Programs Manager



Bridget Borrowdale,  
Senior Aquatic Biologist



Alexis Brandenburg,  
Environmental Scientist I



Daniel Cleves,  
Senior Aquatic Biologist



Stacey Cochran,  
Lead Senior Environmental Scientist



Emilee Harmeling,  
Environmental Scientist II



Jason Heath, P.E.,  
Technical Programs Director



Ryan Hudson,  
Aquatic Biologist II



Riley Lanfear,  
Environmental Scientist I



Erin Linko,  
Aquatic Biologist I



Rob Tewes,  
Lead Senior Biologist



Jamie Tsiominas,  
Environmental Scientist/Organics Detection System



Greg Youngstrom,  
Technical Programs Manager



Lila Xepoleas Ziolkowski,  
Technical Programs Manager

## Administrative Programs



Nick Callahan,  
Environmental Education and Outreach Coordinator



Matt Glazer,  
Building Maintenance, Part-time



Nick Guthrie,  
Accountant



Adam Scott,  
Computer Systems Administrator



Annette Shumard,  
Communications and Outreach Director and President of FORE



Bob Wehmeier,  
Director of Finance and Administration

ORSANCO is an interstate compact agency for the Ohio River Basin, representing 8 states and the federal government. Member states include Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia. Established in 1948, ORSANCO leadership consists of three Commissioners appointed by the Governor from each member state and three appointed by the federal government. ORSANCO's compact mission is to protect the water quality of the Ohio River and its tributaries to be used as a source of drinking water, industrial supply, recreational purposes, and support a healthy and diverse aquatic community.

The Foundation for Ohio River Education (FORE) is a 501(c)(3) non-profit supporting organization created to provide programming in conjunction with and in support of ORSANCO's public outreach goals. FORE's mission is to teach people of all ages within the Ohio River Basin to become environmental stewards that explore river science, improve the perception of Ohio River water quality, and encourage preserving the cultural, ecological, and economic value of basin waters.

## Members of the Commission \*



**Chair**  
David Flannery Steptoe & Johnson, PLLC West Virginia



**Vice Chair**  
Joseph H. Harrison, Jr. Dentons Bingham Greenebaum, LLP Indiana



**Executive Director**  
Samuel Dinkins



**Secretary/Treasurer**  
Douglas E. Conroe Executive Director, Chautauqua Lake Association Inc. New York



Federal  
George Elmaraghy



Federal  
Tom Fitzgerald Director, Kentucky Resources Council



Federal  
David Miracle Environmental Manager, Nucor



Illinois  
James Jennings Director, Illinois EPA



Illinois  
Toby Frevert



Indiana  
John Kupke



Indiana  
Clint Woods Commissioner, Department of Environmental Management



Kentucky  
Spencer Bruce President & CEO, Louisville Water Company



Kentucky  
Jacqueline Coleman Lieutenant Governor



Kentucky  
Rebecca Goodman Secretary, KY Energy and Environment Cabinet



New York  
Amanda Lefton Commissioner, New York Department of Environmental Conservation



New York  
Michael P. Wilson



Ohio  
Holly Christmann Assistant County Administrator for Hamilton County, Ohio



Ohio  
Chair John M. Hoopingarner



Ohio  
John Logue Director, Ohio EPA



Pennsylvania  
Jessica Shirley Secretary Pennsylvania DEP



Pennsylvania  
Bruce Herschlag



Virginia  
Thomas Branim VP of National & International Distribution for Colonial Construction Materials, Inc.



Virginia  
Lou Ann Jessee Wallace Virginia Water Control Board & Owner of Design Printers



Virginia  
Mike Rollband Director, Virginia DEQ



West Virginia  
Ronald R. Potesta President, Potesta and Associates



West Virginia  
Harold Ward Cabinet Secretary, West Virginia DEP

\*As of June 30, 2025. A current list of ORSANCO's Commissioners is available at [www.orsanco.org](http://www.orsanco.org).





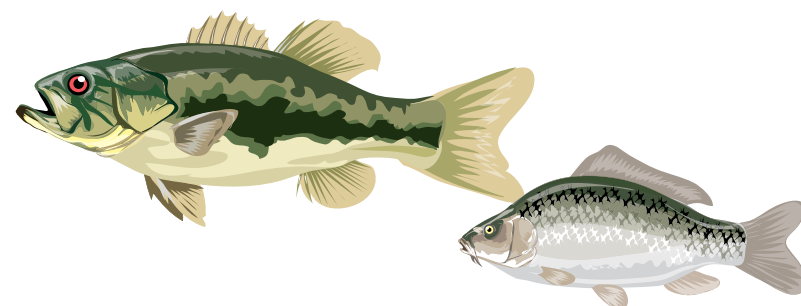
# What We Do

The Ohio River Valley Water Sanitation Commission (ORSANCO), established in 1948, is a signatory compact interstate commission charged with monitoring, assessing, and protecting water quality along the 981-mile Ohio River and its vast network of tributaries.

ORSANCO safeguards drinking water, recreation, and economic vitality for more than five million people, while also protecting the aquatic habitats and ecosystems that make the Ohio River Basin thrive. Governed by eight compact signatory states, and the federal government, the Commission provides a rare, unified platform to collect, analyze, and act on water quality data across political boundaries. From long-term trend monitoring and spill response coordination to public communication and education, ORSANCO plays a critical role in protecting the river during high-stakes events such as the 2023 East Palestine derailment and the 2015 Ohio River Harmful Algal Bloom (HAB)—demonstrating the power of interstate collaboration and real-time data sharing.

We lead efforts in:

- Continuous monitoring of river health and pollution trends
- Emergency spill response coordination across state lines basin-wide
- Source water protection and early warning systems
- Public data access, trend reporting, and transparency
- Education and outreach, including school programs, community events, and litter cleanups
- Support for states, utilities, and federal agencies in safeguarding drinking water and aquatic habitat



## Water Quality Monitoring Programs

ORSANCO operates numerous water quality programs to help ensure vital uses of the Ohio River are protected, like drinking water, industrial supply, recreation, and support of a healthy aquatic habitat.

- Bimonthly Water Quality Sampling
- Clean Metals
- Contact Recreation Bacteria
- Harmful Algal Blooms (HABs)
- Additional sampling includes dissolved oxygen and legacy and persistent chemical monitoring

## Biological Surveys

The Ohio River is divided into 19 navigational pools that are assessed by ORSANCO biologists on a 5-7 year basis. Each pool assessment survey includes 15 randomly selected sampling locations. Each survey collects the following data:

- Habitat
- Fish Contaminants
- Aquatic Vegetation
- Fish & Macroinvertebrate populations

## Emergency & Spill Response

With the substantial industrial and commercial uses of the Ohio River, there is a significant threat for releases and discharges of pollutants.

- ORSANCO's Organics Detection System (ODS) monitors the Ohio River and select tributaries daily for volatile organic compounds (VOCs)
- ORSANCO receives spill reports on a 24-hour basis from state and federal agencies, in which information is then relayed to emergency response agencies and utilities whose water may be impacted

## Communication & Outreach

The communication program disseminates public information and outreach activities throughout the Ohio River Basin in order to improve public perception of the Ohio River water quality and promote the protection and preservation of its vital uses. A wide variety of water quality topics are available via our website, various media channels, and print publications.

Outreach programs include

- Life Below the Waterline mobile aquarium
- Ohio River Sweep multi-state litter cleanup program

## ORSANCO's Foundation for Ohio River Education

Provides water quality & aquatic science education and outreach opportunities to people of all ages. Programs include:

- River Reach floating classroom
- River Watchers citizen science volunteer monitoring program
- Community events & professional development







# YEAR IN REVIEW ORSANCO

OHIO RIVER VALLEY WATER SANITATION COMMISSION

Another year of protecting and promoting the vital uses of the Ohio River



## WHAT WE DO



Water Quality  
Monitoring Programs



24/7 Emergency &  
Spill Response



Communication &  
Public Information

## CONTACT RECREATION



ORSANCO monitors fecal coliform and  
*E. coli* bacteria levels at 6 major cities  
along the Ohio River

**541**  
samples collected

## BIMONTHLY & CLEAN METALS SAMPLING

**263**  
samples collected

Bimonthly water quality sampling has provided  
long term monitoring on the Ohio River and  
mouth of major tributaries since 1975

**160**  
samples collected

The Clean Metals program data evaluates the  
river's ability to support fish and  
macroinvertebrates

## DRINKING WATER

**17,660**

Number of samples taken by our Organics  
Detection System monitoring for volatile  
contaminants in the Ohio River

**398**

Number of spills calls & notifications received by  
ORSANCO. Of these, 53.7% were water related  
incidents

**17**

Number of gas chromatographs (GCs) positioned  
along the 981 miles of the Ohio River and its  
tributaries



## LIFE BELOW THE WATERLINE

2,200 gallon freshwater mobile aquarium



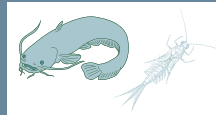
**6** Events **25** Species Caught  
& Displayed **8,776** Visitors

FORE provides environmental  
education and activities to people  
of all ages:

- River REACH floating classroom program
- River Watchers citizen science water quality testing program
- Educator development
- Community outreach events

**11,819** Individuals reached across 5  
states within the basin  
**62** Education & Outreach Events

## BIOLOGICAL PROGRAMS



**30**  
sampling  
locations

Each year, ORSANCO  
biologists collect and assess  
data on habitat, substrate,  
aquatic vegetation, and fish  
and macroinvertebrate  
populations

This year concluded a cycle of  
the National Rivers and  
Streams Assessment (NRSA)

NRSA is conducted every 5  
years to assess the ecological  
condition of the nation's rivers  
and streams

**92**

sampling locations  
throughout the basin



## HARMFUL ALGAL BLOOMS



**30**

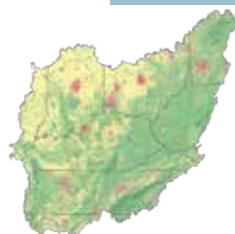
Number of sensors on  
monitoring stations along  
the Ohio River that collect  
data every thirty minutes  
(pH, conductivity,  
turbidity, dissolved  
oxygen, temperature, and  
chlorophyll-a)

## OHIO RIVER WATERSHED

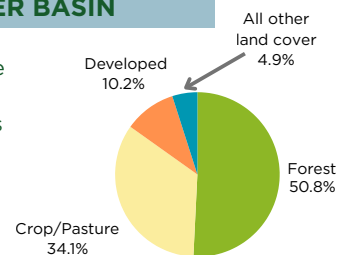


The Ohio River  
drainage basin  
covers 205,000  
square miles,  
encompassing parts  
of 15 states, and  
equals  
approximately 5% of  
the United States  
mainland

## LAND USE IN THE OHIO RIVER BASIN



Land cover plays a crucial role  
in determining water quality,  
as different types of land uses  
and vegetation influence the  
movement of water and the  
absorption of pollutants



## OHIO RIVER SWEEP



**125** Clean-up events  
**4,267** Volunteers  
**90** Tons of trash collected  
**996** Tires removed  
**259** Miles covered

# A Living River: Stories Beneath the Surface of a Shared Responsibility

The biological field season data gathered during 2023 through 2024 illustrated that beneath the surface, the river is alive with resilience and diversity. More than 40,000 fish representing 152 species were documented across the Basin during this time, each survey site reflecting a unique balance of abundance and rarity, commonality and fragility. These findings serve as more than data points. They are reminders of the river's ability to endure, adapt, and provide—while also highlighting the responsibility we share to protect habitats that support both familiar and imperiled species. The return of sensitive fish, the persistence of resilient ones, and the quiet presence of rare darters and minnows together tell a story of progress and vigilance.

Building on this, 2024 brought progress in refining methods and strengthening transparency. ORSANCO updated its macroinvertebrate sampling protocols to close data gaps, successfully retrieved Hester-Dendy samplers at all probabilistic sites, and delivered updated fish tissue contaminant advisories to the states. Efforts also expanded to incorporate PFAS (Per- and Polyfluoroalkyl Substances) data into future public releases, ensuring that residents, scientists, and decision-makers remain informed about emerging challenges. Partnerships deepened with utilities, educators, and community organizations, reinforcing a basin-wide commitment to stewardship.

Momentum extended beyond the data collection. In December 2024, federal legislation was introduced in the U.S. House of Representatives—the Ohio River Basin Restoration Program Act. The bill proposes creation of a new Ohio River National Program Office within EPA to coordinate basin-wide restoration. It authorizes large-scale projects to improve water quality, restore fish and wildlife habitat, address toxic and mine-related pollution, reduce flood risks, and expand public access and education. Importantly, it requires measurable goals, a multi-year action plan, and transparent reporting to Congress and the public.

In May 2025, ORSANCO Commissioners unanimously adopted Resolution 2-25, formally supporting this federal restoration initiative. The resolution recognized the Basin's national economic and ecological importance—providing drinking water to over five million people, supporting 30 million residents, and contributing more than \$180 billion annually to the economy. It also affirmed ORSANCO's unique role as the trusted interstate Commission for water quality coordination and accountability, ensuring that any federal framework includes sustained support for science, monitoring, and state-led implementation.

Meanwhile, ORSANCO's Foundation for Ohio River Education (FORE) deepened its role in connecting science to students, families, and communities throughout the Basin.

The Life Below the Waterline traveling mobile aquarium continued to grow and reached thousands across multiple states, offering an up-close encounter with native fish and their habitats. From classrooms to community events, the exhibit inspired new awareness of the river's biodiversity and the importance of water quality protection. The Ohio River Sweep litter cleanup mobilized thousands of volunteers of all ages in hundreds of communities stretching the length of the Basin, building pride and stewardship through citizen action.

Beyond these flagship programs, ORSANCO and FORE advanced outreach and citizen science initiatives that invited the public into the work of monitoring. Hands-on water quality testing, interactive story maps, and community education events gave professionals, residents, and students alike the chance to engage directly with ORSANCO's science and contribute to protecting the Ohio River. Together, these efforts reinforced FORE's mission to inspire stewardship through education and outreach—ensuring that science is not only measured in data, but also lived through shared experiences across the Basin.

The Ohio River system continues to tell a story of resilience and renewal. It sustains drinking water, commerce, recreation, and wildlife for millions. Looking ahead, ORSANCO will continue surveying new pools, assessing water quality, and expanding outreach to ensure communities remain connected to the science that protects their waterways. As this reporting year closes, one truth stands clear: the Ohio River and its tributaries are alive. Its story is our shared responsibility, and together we will continue to safeguard its waters for generations to come.





# Biological Programs: Monitoring the River's Health

ORSANCO's biological programs provide essential insight into the ecological condition of the Ohio River and its tributaries. Through long-term surveys of fish, macroinvertebrates, aquatic vegetation, and habitat, staff track biodiversity, detect rare or sensitive species, and refine methods that strengthen water quality science across the Basin.

### Updated Macroinvertebrate Protocols

In 2024, ORSANCO implemented an important update to its macroinvertebrate survey methods. For the first time, two Hester-Dendy (HD) samplers were deployed at each site replacing the previous practice of pairing one HD with a multihabitat (MH) kick sample. MH samples are costly to process and often underrepresent the macroinvertebrate community given they are obtained from shallow shoreline areas. HDs sample the community at depth, where conditions are more stable, producing a more representative sample. This change gives biologists the best chance of obtaining critical data for assessing the Ohio River in a cost efficient manner.

### Probabilistic Surveys – 2024 Results

Biologists sampled 30 sites across two Ohio River pools, completing 30 fish surveys and 45 macroinvertebrate collections:

- Montgomery Pool:** 3,265 fish representing 43 species were recorded. Highlights included the rediscovery of the Longhead Darter (once thought extirpated from the Ohio River) and numerous young-of-year River and Smallmouth Redhorses. Abundant aquatic vegetation supported robust populations of dragonflies, caddisflies, and midges.

- Newburgh Pool:** 2,895 fish representing 44 species were sampled. Notable catches included Black Buffalo and River Redhorse, alongside diverse communities of caddisflies and midges.

These findings highlight both the effectiveness of ORSANCO's updated methodology and the ecological diversity present in Ohio River pools.

continued on page 12



BASIN LEVEL		SITE LEVEL	
ENVIRONMENTAL ATTRIBUTES		BIOLOGICAL CONDITION RATINGS	
Ohio River		<b>FISH</b>	<b>MACROS</b>
Tributaries		Excellent	Excellent
Locks & Dam		Very Good	Very Good
Most Populous Cities		Good	Good
Developed Areas		Fair	Fair
Agricultural/Pastoral Lands		Poor	Poor
Natural Forests		Very Poor	Very Poor

**Ohio River Pools – Notable 2024 Catches**  
**Montgomery Pool:** Longhead Darter (previously thought extirpated from the Ohio River), numerous young-of-year River and Smallmouth Redhorses, and robust diversity of dragonflies, caddisflies, and midges tied to abundant aquatic vegetation.

**Newburgh Pool:** Species of concern including Black Buffalo and River Redhorse, alongside high diversities of caddisflies and midges.

**Montgomery Pool – Healthy Condition**  
In 2024, ORSANCO's Biological Program (OBP) assessed the Montgomery Pool, located in the upper Ohio River near Pittsburgh, Pennsylvania. Sampling was conducted for fish and habitat in late August, with macroinvertebrate and vegetation surveys following in late summer and fall.

- Fish Community: Rated Fair, dominated by minnows (38.8%) and sunfish/bass (21.8%).
- Macroinvertebrates: Rated Good, with midge larvae (32.9%) and snails (14.5%) most common, along with diverse caddisfly, dragonfly, and damselfly larvae.
- Notable Finding: Invasive aquatic vegetation (*Hydrilla verticillata*) was prevalent, forming dense beds and altering shoreline habitat.

OBP evaluated these results using the Modified Ohio River Fish Index (mORFin) and the Ohio River Macroinvertebrate Index (ORMin)—tools designed to assess biological conditions by comparing survey findings to a baseline healthy Ohio River community. These assessments ensure compliance with aquatic life standards under the 1972 Clean Water Act.

**Newburgh Pool – Healthy Condition**  
The Newburgh Pool, located along the Indiana/Kentucky state line in the lower Ohio River, was also determined to be in healthy condition during the 2024 cycle. Fish and habitat sampling occurred in July, followed by macroinvertebrate and vegetation assessments in late summer and fall.

- Fish Community: Rated Good, dominated by minnows (34.7%) and herring/shad (28.4%).
- Macroinvertebrates: Rated Good, with a mix of midge larvae (32.3%) and caddisfly larvae (23.0%).
- Notable Finding: Invasive silver and bighead carp were present throughout the pool.

As with all 15 navigational pools of the Ohio River, results were evaluated using mORFin and ORMin to provide a consistent measure of aquatic health and to track progress toward Clean Water Act aquatic life standards.



## National Rivers and Streams Assessment (NRSA)

As part of the 2023–2024 NRSA, ORSANCO participated in 92 field events across four states (OH, KY, IN, IL), sampling more than 40,000 fish representing 152 species. In 2024 alone, 45 events yielded 15,000 individuals from 132 species.

Several species not typically found on the Ohio River mainstem were documented, including Creek Chubsucker, Redspotted Sunfish, Redline Darter, Barcheek Darter, Tadpole Madtom, and Hornyhead Chub. These findings underscore both the resilience of common species and the fragile presence of rare and endangered fish.

### Top Species Recorded

- Creek Chub – 4,425
- Gizzard Shad – 3,360
- Emerald Shiner – 2,370
- Western Blacknose Dace – 2,443
- Central Stoneroller – 2,166
- Longear Sunfish – 1,646
- Bluegill – 1,140

### Rare and State-Endangered Species

- Blue Sucker, Tippecanoe Darter, Shovelnose Sturgeon, Muskellunge
- Bluebreast Darter (IN), Pugnose Minnow (IL), Northern Brook Lamprey (OH)

These results highlight the importance of habitat protection and water quality stewardship across the Basin.

### Looking Ahead

In 2025, ORSANCO's biological staff will survey the Racine and Willow Island Pools, with a special focus on the Cannelton Pool, where macroinvertebrate sampling was incomplete in 2023. Updated HD protocols will again ensure robust data for the ORMI Index. Additionally, ORSANCO has delivered proposed 2025 fish tissue consumption advisories to Basin States and is preparing to make PFAS fish tissue data publicly available online. Expanded tissue sampling will begin in July 2025, with results expected in 2026.



## Biological Programs



## Water Quality Monitoring – Harmful Algal Blooms

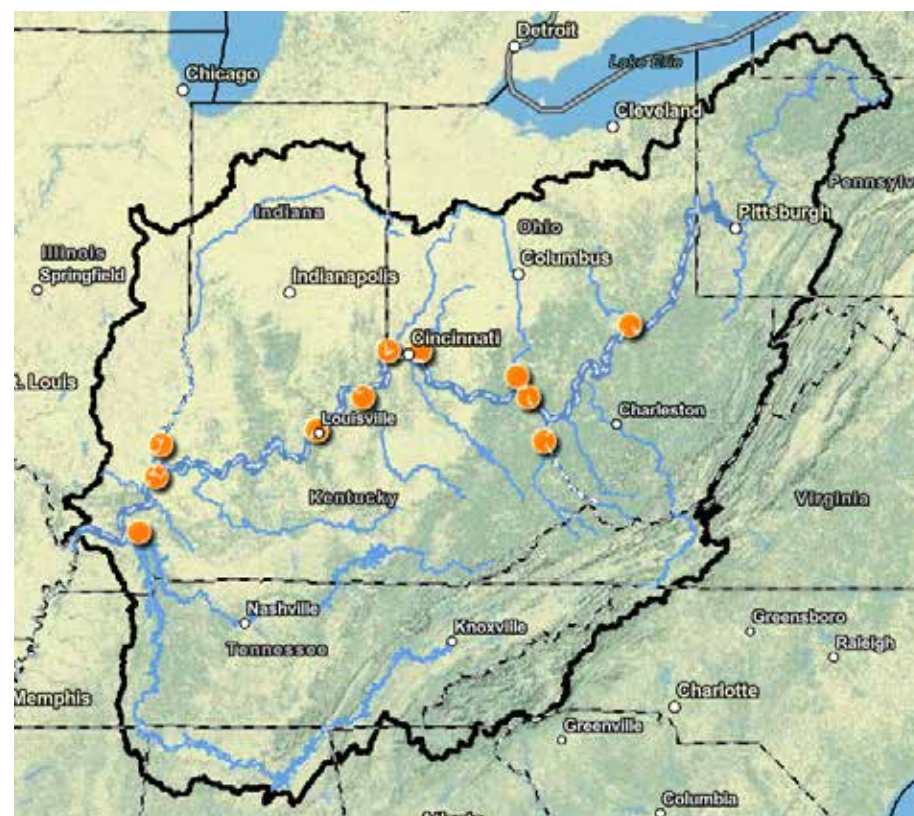
### New Nutrient Sampling Program in Support of the Mississippi River/Gulf of America Hypoxia Task Force

In August 2024, ORSANCO launched a targeted nutrient monitoring initiative at 11 strategic sites throughout the Ohio River Basin in support of the Mississippi River/Gulf of America Hypoxia Task Force (HTF). This effort aims to address critical data gaps by providing consistent, high-quality data to improve understanding of nutrient load contributions from the Ohio River to the Mississippi River and ultimately, the Gulf of America.

Through close collaboration with state partners, sampling locations were selected to reflect high-priority tributaries and points of confluence where nutrient data were previously limited or absent. Parameters analyzed include nitrite/nitrate as nitrogen, orthophosphate, total phosphorus, and total Kjeldahl nitrogen (TKN). These nutrients are key indicators of excess nutrient loading that contributes to hypoxic conditions and algal blooms in downstream water bodies.

As of this report, a total of **110** nutrient samples have been collected, with analysis ongoing. Although it is still early in the program, these data will eventually enable states to refine nutrient load estimates and better inform nutrient reduction strategies in support of HTF goals.

This program was made possible through coordination with state environmental agencies and the Hypoxia Task Force, reflecting a shared commitment to reducing nutrient pollution and protecting water quality across the Mississippi River Basin. Analyses of these sampling results will be included in future reports as the dataset matures and analysis progresses.



### Monitoring Sites:

- Pinckneyville (Cumberland River)
- Greenup (Ohio River)
- Marietta (Muskingum River)
- New Harmony (Wabash River)
- Carrollton (Kentucky River)
- Newtown (Little Miami River)
- McAlpine (Ohio River)
- Louisa (Big Sandy River)
- Lucasville (Scioto River)
- JT Myers (Ohio River)
- Elizabethtown (Great Miami River)



# Water Quality Monitoring Contact Recreation

**541**

Samples taken during the recreation season  
April through October

## Combined Sewer Overflow (CSO) Monitoring and Innovative Pilot Studies

ORSANCO continued its commitment to safeguarding water quality by conducting **541 water samples across the six largest Combined Sewer Overflow (CSO) communities along the Ohio River: Pittsburgh, Wheeling, Huntington, Cincinnati, Louisville, and Evansville.** These samples were analyzed for E. coli, a key indicator of waterborne pathogens and public health risk. Monitoring in CSO communities provides critical data to evaluate the effectiveness of infrastructure improvements and to better understand the impacts of wet weather events on the Ohio River.

To further advance monitoring capabilities, ORSANCO launched a pilot study using a real-time Proteus instrument, funded by a West Virginia 604(b) grant. This cutting-edge technology allows for near real-time detection of contaminants, creating opportunities for faster public health advisories and more responsive management decisions during overflow events.

In addition, ORSANCO partnered with the U.S. Environmental Protection Agency to expand regional monitoring capacity. Staff assisted EPA by processing samples collected on a mobile qPCR instrument to detect algal toxins. This collaboration highlights how new technologies and interagency partnerships are shaping the future of water quality monitoring in the Basin.

Together, these efforts demonstrate ORSANCO's dual role as both a reliable provider of long-term monitoring data and an innovator testing new tools and approaches to address emerging water quality challenges.



# Water Quality Monitoring - Bimonthly & Clean Metals Monitoring



ORSANCO's long-term monitoring programs continue to provide the backbone of water quality assessment in the Ohio River Basin. This fiscal year, staff carried out extensive sampling at both **Bimonthly** and **Clean Metals** sites to ensure that conditions are measured consistently, transparently, and with the highest standards of scientific integrity.

Together, these programs delivered a comprehensive look at river health:

- **191 bimonthly sampling events** at 16 sites
- **96 clean metals sampling events** at 16 sites
- More than **130 quality assurance samples** to ensure reliability

This commitment to rigorous and repeated sampling provides states with the best possible science to protect both public health and aquatic life.

## Bimonthly Monitoring

Bimonthly water quality monitoring is conducted at **32 sites**, including 16 sites along the Ohio River and 16 tributary locations. Between January and December 2024, staff completed **191 sample events** (excluding New Harmony in January due to thick ice) and collected **72 quality assurance samples**, including blanks and duplicates, to ensure accuracy and reliability.

Overall, **96% of samples met water quality criteria**, with only seven exceedances recorded for total dissolved solids. These findings provide important insights into basin-wide water chemistry trends and help guide management decisions at both state and regional levels.

ORSANCO Bimonthly data can be found at [orsanco.org/programs/bimonthly-water-quality-sampling](https://orsanco.org/programs/bimonthly-water-quality-sampling)

## Clean Metals Monitoring

Clean Metals were sampled at **16 sites** along the Ohio River, resulting in **96 sample events** supported

by 64 quality assurance samples. Monitoring focused on detecting trace metals that can pose ecological and human health risks.

Overall, 79% of Clean Metals samples met water quality criteria, with most exceedances occurring in January or March. 96% of samples met human health criteria, with only a few Total Mercury exceedances observed in January. Likewise, 83% of samples met aquatic life criteria, with Total Iron exceedances limited to 12 sites.

These findings highlight the importance of ongoing Clean Metals monitoring in identifying potential risks and supporting the efforts of Basin States to meet human health and aquatic life water quality criteria.

ORSANCO Clean Metals data can be found at [orsanco.org/data/clean-metals](https://orsanco.org/data/clean-metals)

## Why It Matters

Together, the Bimonthly and Clean Metals programs supply critical data for assessing compliance with water quality standards, identifying emerging concerns, and supporting regional decision-making. By identifying both exceedances and long-term trends, ORSANCO ensures that data not only documents conditions but also drives solutions. The combination of robust long-term monitoring and rigorous quality assurance ensures that ORSANCO continues to serve as the trusted source of scientific information for the Ohio River Basin.

## In 2024 staff collected ...

- **191 bimonthly samples**  
96% met water quality criteria
- **96 clean metals samples**  
79% met water quality criteria  
96% met human health criteria  
83% met aquatic life criteria
- **136 quality assurance samples**  
... supporting the efforts of Basin States to maintain water quality on the Ohio River and its tributaries



# Water Quality Monitoring Organics Detection System & Spill Response

## Strengthening Capacity

In 2024, ORSANCO's **Organics Detection System (ODS)** reached a major milestone with the award of a **\$688,000 federal grant** secured through the office of Senator Sherrod Brown. This critical funding will be used to upgrade instrumentation at ODS stations within Ohio, significantly enhancing rapid response capabilities and ensuring continued protection of drinking water supplies across the Basin.

Throughout the year, ODS staff analyzed approximately **17,660 samples for volatile organic compounds (VOCs)**. This high-frequency monitoring provides early warning for potential chemical contamination events and allows downstream water utilities to take timely, protective action.

## Spill Notifications and Response

ORSANCO also plays a vital role in coordinating regional spill response. In 2024, the Commission received **398 spill notifications** through the National Response Center. Of these, **214 (54%) involved water-related incidents** within the Ohio River Basin.

Thanks to strong coordination with utilities, emergency responders, and state and federal partners, no water-related spills in 2024 required action beyond **routine notification and awareness protocols**. This reflects both the effectiveness of upstream communication and the vigilance of Basin partners in protecting public health and the environment.

## Why It Matters

With thousands of chemical shipments moving across the Basin each year, the Ohio River remains vulnerable to accidental spills. ORSANCO's **ODS program and spill response network** provide an essential safety net, combining **early detection, interagency coordination, and rapid communication** to ensure drinking water protection for millions of residents.

**We are proud to give special recognition to all Ohio River Drinking Water Utilities partners and the following contributing partners who fund our ODS program:**



## ORSANCO Staff Highlights



Jamie Tsiominas celebrated a 5-year milestone with ORSANCO, known for her dedication, teamwork, and undeniable resourcefulness.



Bob Wehmeier joined as Director of Finance and Administration, bringing extensive executive leadership and expertise in financial strategy and organizational improvement.



Annette Shumard was promoted to Communications and Outreach Director and continues as Executive Director and President of FORE, leading ORSANCO's public information and outreach programs.



Erin Linko advanced to Aquatic Biologist I following a strong year of professional growth as a seasonal biologist.



Lila Xepoleas Ziolkowski was promoted to Technical Programs Manager for Source Water Protection and Emergency Response, honoring more than 20 years of service in spill response, monitoring, and data integrity.

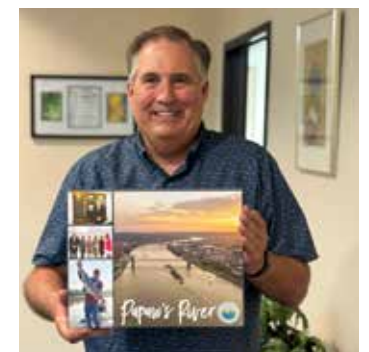


Greg Youngstrom was promoted to Technical Programs Manager for Water Quality Monitoring and Assessment, recognizing his decades of leadership and expertise in regional and national water quality.

## This fiscal year marks another milestone in ORSANCO's legacy of leadership!

### Honoring Richard Harrison

We extend our deepest gratitude to Richard Harrison, former Executive Director and Chief Engineer, whose decade-long leadership infused ORSANCO with vision, basin-wide collaboration, state and federal recognition, and deep heartfelt commitment. From guiding our nationally recognized emergency spill response efforts to championing basin-wide collaboration, Richard steered this Commission with both precision and warmth. We'll always cherish his sense of humor, dedication to the mission—and yes, those legendary staff snacks. A true captain of the Ohio River, fondly known by his loved ones as "Papaw's River." Wishing you smooth sailing ahead, Richard!



### Welcoming Sam Dinkins



We are equally proud to welcome Sam Dinkins as ORSANCO's new Executive Director. During his first year, Sam has already strengthened the organization's technical foundation through a strategic reorganization that enhances efficiency, scientific coordination, and program delivery. He has also advanced ORSANCO's role in federal policy discussions—guiding the adoption of a Commission resolution in support of a basin-wide restoration initiative and contributing to legislative efforts that could secure new pathways for long-term investment in Ohio River water quality and resilience. Sam also marked an extraordinary 30 years of service with ORSANCO, a testament to his leadership, technical expertise, and enduring commitment to the agency and its mission.

Together, past and present leadership ensure ORSANCO remains not only a trusted guardian of the Ohio River system, but also a catalyst for collaboration, innovation, and stewardship across the Basin.



# Ohio River Basin Partnerships & Activities

## Congressional Leadership for the Ohio River Basin

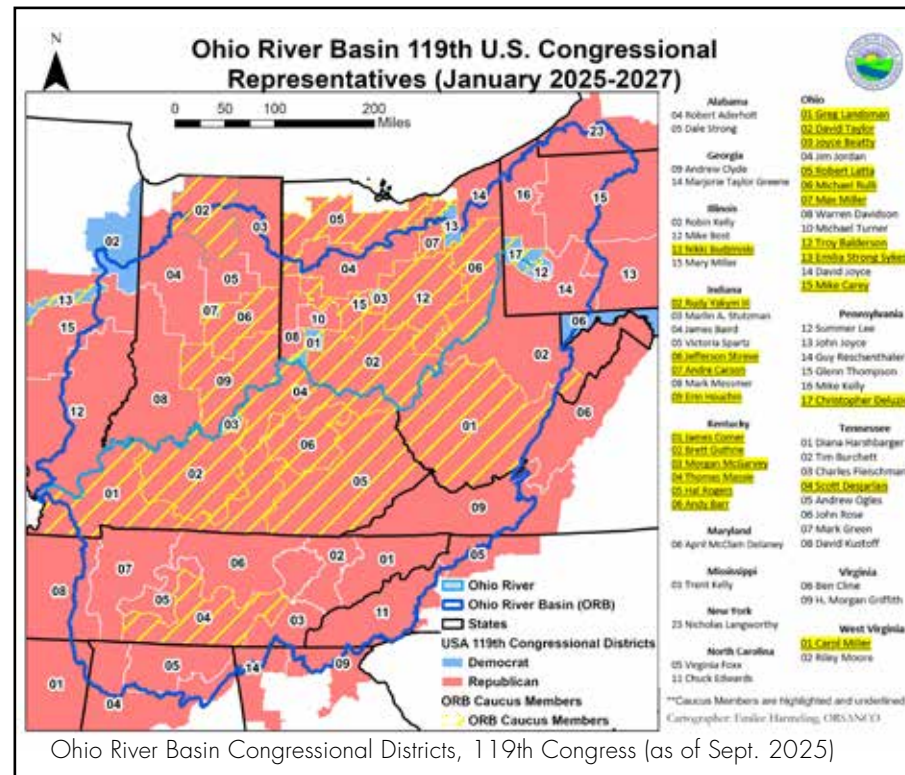
The Ohio River and its tributaries are a lifeline—supplying drinking water and recreational opportunities for more than 30 million people, supporting commerce, agriculture, and industry, and sustaining diverse ecosystems across 14 states. Yet it remains the largest river system in the United States without dedicated federal restoration funding. The bipartisan Ohio River Basin Congressional Caucus is working to change that, bringing lawmakers together to secure long-overdue investment in the Basin’s health, resilience, and future. Federal partnership is essential to protecting and restoring this nationally significant resource. The Caucus provides a bipartisan forum for lawmakers to advance shared priorities such as improving water quality, supporting economic development, enhancing flood resilience, and ensuring safe and reliable water access.

For more information visit: [orsanco.org/congressional-caucus](https://orsanco.org/congressional-caucus)

This map highlights the 58 U.S. Congressional Districts across the Basin and identifies members who have already joined the Caucus in the 119th Congress. This collaboration—alongside the leadership of Basin Governors, member states, partners, and ORSANCO Commissioners—underscores our collective commitment to safeguarding the Ohio River for future generations.

## Ohio River Basin Congressional Caucus Advancing Federal Support

In 2024, Congressman Morgan McGarvey (KY-03) and Congresswoman Erin Houchin (IN-09), co-chairs of the Ohio River Basin Congressional Caucus, introduced the Ohio River Restoration Program Act—the first comprehensive federal effort to restore and protect the 204,000-square-mile Basin. ORSANCO endorsed the development of federal legislation to create an Ohio River Restoration Program through adoption of ORSANCO Resolution 2-25, which calls for direct EPA authorization to provide grants for monitoring, coordination, and implementation.



# Partner in Basin-Wide Collaboration Ohio River Basin Alliance (ORBA)

## Ohio River Basin Alliance: A Unified Voice

In June 2025, the **Ohio River Basin Alliance (ORBA)** released the Ohio River Basin Restoration & Protection Report, a science-based road map to improve water quality, ecological health, and community resilience across the 14-state Basin. Developed through more than a decade of collaboration with ORSANCO, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and over 200 stakeholder organizations, the plan outlines actionable goals and priority projects for restoring habitat, reducing pollution, and strengthening flood resilience. It also lays the foundation for federal legislation like the Ohio River Restoration Program Act, ensuring that national investments align with regional leadership.

ORSANCO remains a core partner in this effort, providing trusted, science-based monitoring and oversight to guide restoration. The plan was formally released at a Cincinnati press conference, alongside the launch of ORBA's new website:

[ohioriverbasinalliance.org](https://ohioriverbasinalliance.org)

## Shared commitment to the Basin's Future

Together, the work of the **Ohio River Basin Caucus, ORBA members, ORSANCO** and a wide variety of partner agencies represents a new era of basin-wide collaboration and federal partnership. By uniting legislative action, basin-wide planning, and science-based leadership, these efforts lay the groundwork to protect the Ohio River as a lifeline for communities, ecosystems, and economies for generations to come.





# Partner in Adventure & Science: Ohio River Way

## A Long-standing Journey from Stewardship Collaboration to Canoe Adventures

ORSANCO and Ohio River Way have paddled forward together, weaving community connection, environmental stewardship, and scientific engagement. This year, our partnership reached new heights during the Ohio River Way Challenge, where ORSANCO scientists were featured on a new floating classroom experience alongside paddlers and community participants. The newly introduced RESTORE Lab — a 60-foot



mobile research and photography hub—provided the perfect setting for our scientists to lead hands-on water quality monitoring, biodiversity assessments, and public engagement programming turning the river adventure into a living classroom for everyone involved! Adding to the excitement, the Ohio River Way route—spanning 308 miles—received National Water Trail designation, amplifying its regional and national impact. We are proud to celebrate Ohio River Way’s achievements and our shared path forward in advancing Ohio River recreation, stewardship, and protection.

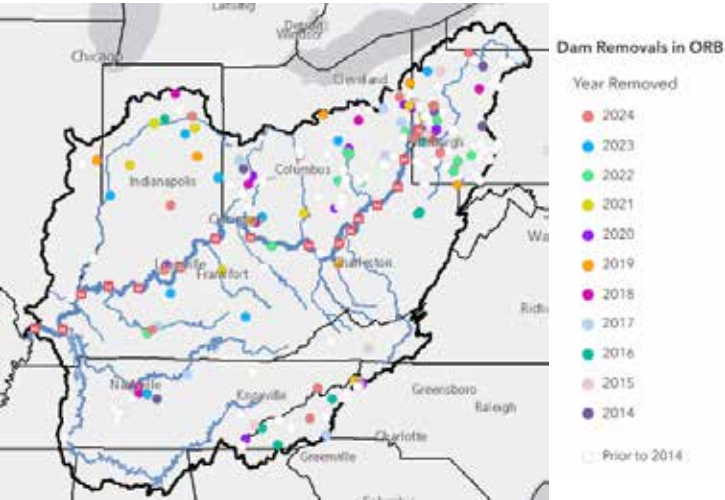


# Basin-Wide Improvement Projects

## Record Year for Dam Removals in the Ohio River Basin

In 2024, a record 19 dam removal projects were completed across the Ohio River Basin—the largest number in a single year since efforts began in the 1950s. These projects reflect growing national and regional momentum to restore river connectivity, improve aquatic habitats, and reduce safety risks posed by aging infrastructure.

While many dams continue to serve vital purposes—navigation, flood control, hydropower, and water supply—numerous older, non-operational structures no longer fulfill these roles. Left in place, they often block fish migration, fragment habitats, and create hazards for recreation. Selective removal of such dams advances ecological restoration while complementing the missions of federal and state agencies tasked with maintaining essential infrastructure.

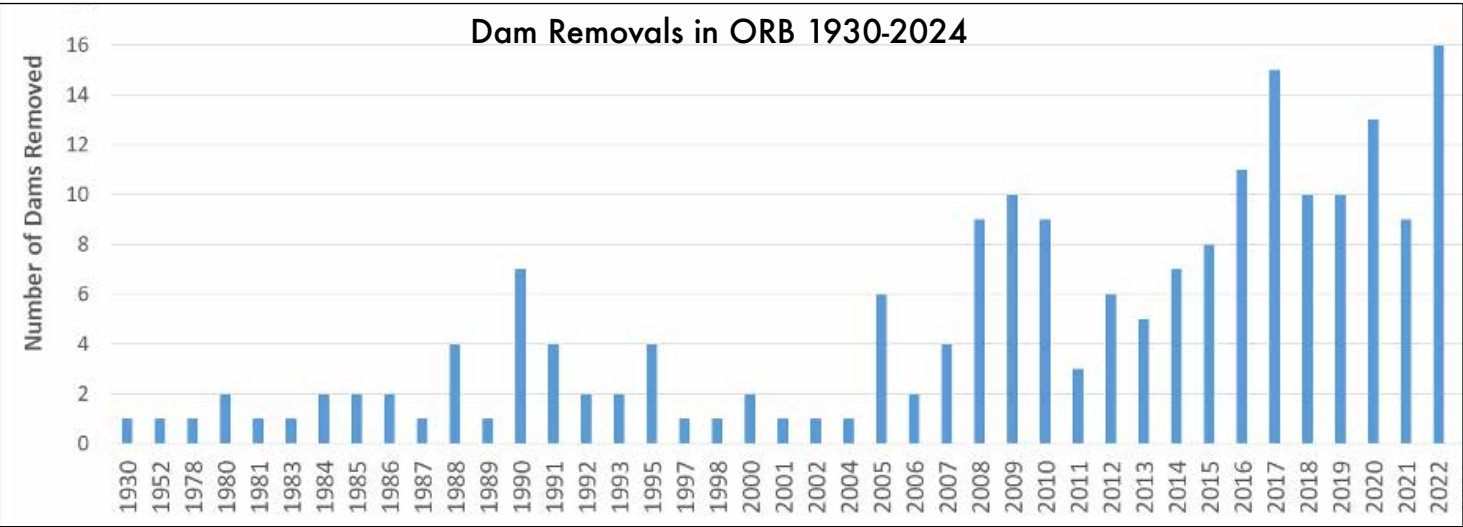


One of the most significant projects in 2024 was the removal of Green River Lock and Dam No. 5 in Kentucky. Decommissioned in 1951, the 32-foot structure was dismantled in a landmark U.S. Fish and Wildlife Service-led effort—the largest dam removal in Kentucky’s history.

The project restored 73 miles of free-flowing river, revitalizing habitat for nine endangered mussel species, the federally endangered Kentucky cave shrimp, and sportfish such as smallmouth bass, rock bass, and muskellunge. The effort also enhances paddling safety and supports outdoor recreation and economic development through the expansion of the Green River Blueway and Trail Town initiatives.

Pennsylvania continues to lead the Basin in cumulative removals, with 77 dams removed to date. Meanwhile, new projects are underway in other states, including the removal of low-head dams on Ohio’s Great Miami River and Stillwater River, which will improve aquatic connectivity and reduce public safety risks.

Collectively, these efforts reflect a science-based approach to river restoration that balances the continued importance of dams in serving the public good with the ecological, safety, and economic benefits of removing obsolete structures. By restoring natural river function, eliminating costly maintenance, and creating new opportunities for public access and recreation, dam removals are helping the Ohio River Basin’s waterways thrive.







## Foundation For Ohio River Education FORE

### The Foundation for Ohio River Education (FORE)

is a 501(c)(3) supporting organization of ORSANCO that raises funds to deliver education and outreach programs across the Ohio River Basin. FORE educators are trained by ORSANCO scientists, ensuring that programs reflect real-world aquatic science practices. This collaboration allows students and communities to experience the science behind water quality monitoring while gaining a deeper appreciation for the Ohio River's vital resources.

This year, FORE received an exciting \$25,000 grant from the Bosch Community Fund to launch our pilot Ohio River Academy. Bosch's grant supports project-based, STEM-rich, and environmental learning—key areas of their philanthropic focus in the Florence, KY, region. Offering an intensive in classroom training, research competition, and experiential learning excursions. FORE will measure the impact via student surveys that track growth in broader understanding, environmental stewardship, and career interest in Ohio River learning and the field of aquatic sciences.

By combining field-based experiences with classroom learning, FORE programs build understanding of river ecology while fostering stewardship of water resources.

### Education Program Highlights River REACH

In partnership with BB Riverboats and regional watershed organizations, FORE expanded its floating classroom programs beyond Greater Cincinnati to new regions including Frankfort, KY, Columbus, OH, and Dayton, OH. The Ohio River Summer Conservation Course also returned for a second year, offering career-focused, hands-on experiences in collaboration with Thomas More University Biological Field Station, Ohio River Foundation, and Sanitation District No. 1 of Northern Kentucky.

### River Watchers

With support from the EQT Foundation and West Virginia American Water, FORE's citizen science volunteer monitoring program grew to include seven new sites in Pennsylvania, West Virginia, and Ohio. Partnerships with the Loveland Learning Garden and Glen Helen Nature Preserve further extended the reach of aquatic science education into schools and community centers in the Greater Cincinnati area as well.

### Community Events

FORE partnered with We Work the Waterways to connect high school students with careers in maritime industries and water quality fields, reaching Owensboro, KY; Paducah, KY; Cincinnati, OH; Point Pleasant, WV; and Pittsburgh, PA. FORE also co-hosted the Greater Cincinnati Environmental Educators Career Fair and the Greater Cincinnati Earth Day Green Careers Fair, where more than 300 attendees connected with 50+ environmental organizations.

### Conference & Training Presentations

FORE and ORSANCO staff shared expertise at the Indiana MS4 Partnership Conference and the Environmental Education Council of Ohio Conference, while also leading professional development for educators through Glen Helen Nature Preserve's Ohio Educator's Week, Cincinnati Public Schools, and the Ohio Certified Volunteer Naturalist course.

### Education & Outreach By the Numbers

- 62 education programs reached 11,819 individuals
- 6 Life Below the Waterline (LBWL) exhibits reaching an additional 8,776 participants
- River REACH: 14 programs, 433 participants
- River Watchers: 7 new school sites
- Community Events: 32 events including 11,099 participants
- Professional Development: 5 presentations, 79 participants

### State Breakdown

- IN: 3 programs, 103 reached
- PA: 7 programs, 515 reached
- KY: 15 programs, 1,183 reached (17 programs, 3,156 with LBWL)
- OH: 36 programs, 10,550 reached (39 programs, 16,691 with LBWL)
- WV: 1 program, 149 reached (2 programs, 811 with LBWL)



**Elizabeth Burton**  
FORE Outreach Specialist



**Rachel Toney**  
FORE Outreach Specialist





## Outreach Programs

### Ohio River Sweep

The 2024 Ohio River Sweep season ran from March through October. Supported by our largest funder the Ohio EPA Litter Grant and over 30 steadfast river champion sponsors, the program mobilized 4,267 volunteers across 125 cleanup events. Together, they removed over 90 tons of trash—including 996 tires—and recycled 2.5 tons of material. Cleanups covered 258 miles of shoreline, providing flexible opportunities for schools, scout troops, civic clubs, parks, and community groups making a transformative difference along the river and its tributaries.



### Life Below the Waterline

The 2,200 gallon mobile aquarium is operated and owned by ORSANCO and is one of only a dozen such aquariums in the United States. It serves as an educational display that highlights the fishes of the Ohio River Basin as well as the importance of water quality as a source of drinking water and to support a healthy aquatic ecosystem.

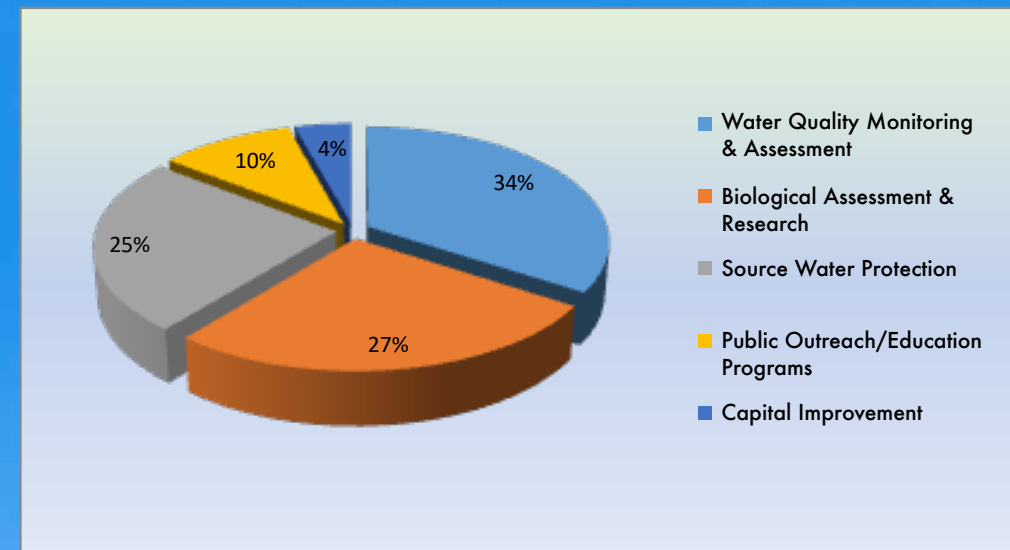
The Ohio River Basin contains nearly half of the fish diversity of North America. The goal of this program is to highlight the significance of fish diversity of basin waterways flowing through our backyards, change negative preconceptions about the water quality of the Ohio River, and foster an appreciation for this often undervalued resource - one community at a time. All fishes for programs are collected by ORSANCO staff and returned following each exhibit.

### Foundation for Ohio River Education Sponsors



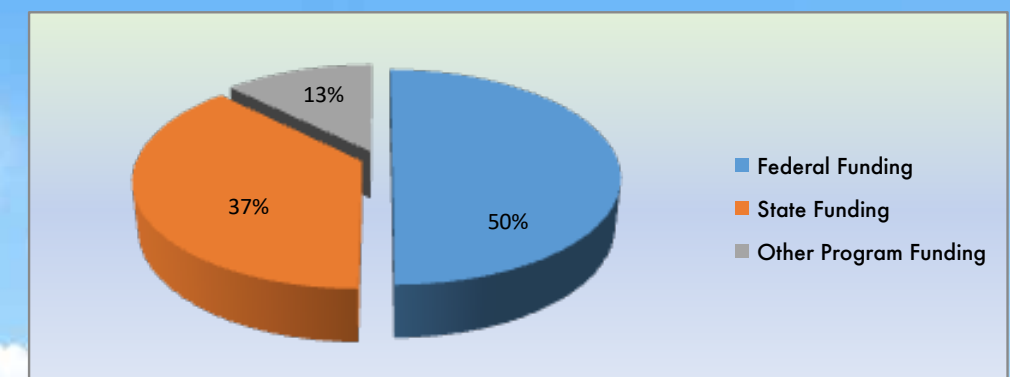
## 2025 Orsanco Resources Overview

### Budgeted Expenditures by Major Program Area



Water Quality Monitoring & Assessment  
Biological Assessment & Research  
Source Water Protection  
Public Outreach/Education  
Capital Improvement

### Budgeted Resources by Major Source



Federal Funding  
State Funding  
Other Program Funding

Audited detailed financial statements for 2025 will be available in February 2026





## A River Champion

Honoring the Life and Service of Frank Joseph Blaskovich Jr. (1955–2025)

In 2025, the Ohio River Basin water community lost a respected colleague and friend with the passing of Frank Joseph Blaskovich Jr. on February 28, at the age of 70.

Born and raised in Wheeling, West Virginia, Frank devoted his career to public service through the City of Wheeling Water Department, where he served as a Water Analyst and later as manager of the city's water treatment plant. For decades, his leadership and dedication ensured the delivery of safe, reliable drinking water to more than 30,000 residents of Wheeling. His technical expertise, problem-solving skills, and steadfast commitment to water quality earned the admiration of both colleagues and the community he served.

Frank's impact reached far beyond his hometown. Beginning in the early 1990s, he became an operator for ORSANCO's Organics Detection System (ODS), playing a critical role in monitoring the river for chemical contaminants and protecting downstream water supplies. He also served actively on ORSANCO's Water Users Advisory Committee, where his practical insight into drinking water treatment operations helped guide important decisions affecting utilities and communities throughout the Ohio River Basin.

Frank will be remembered not only for his professional excellence, but also for his unwavering dedication to public health and environmental stewardship. His legacy lives on in the cleaner, safer water he helped provide and in the example he set for future generations of water professionals.

On behalf of ORSANCO and the Ohio River Basin community, we extend our deepest condolences to Frank's family, friends, and colleagues.



# ORSANCO

5735 Kellogg Avenue  
Cincinnati, OH 45230  
Phone (513) 231-7719  
[www.orsanco.org](http://www.orsanco.org)

Follow us on Facebook, Instagram, YouTube, and X!

[facebook.com/ORSANCO](https://facebook.com/ORSANCO)

[instagram.com/orsancochannel](https://instagram.com/orsancochannel)

[Youtube.com/@ORSANCOchannel](https://Youtube.com/@ORSANCOchannel)

[x.com/ORSANCOchannel](https://x.com/ORSANCOchannel)

